



Constellation NRC Pre-Submittal Meeting

Request for Exemptions from 10 CFR 50.55a(a)(3)(ii), which incorporates by reference Regulatory Guide 1.147, Revision 21, for Code Case N-921, and 10 CFR 50.55a(y) Overview of Exemption Request Background Basis for Approval of Exemption Request Environmental Considerations Proposed Schedule



In accordance with 10 CFR 50.12, "Specific exemptions," Constellation Energy Generation, LLC (CEG), will request NRC approval of exemptions from 10 CFR 50.55a(y), which defines the ISI interval as 10 years by reference to IWA-2431 and 10 CFR 50.55a(a)(3)(ii), which incorporates by reference Code Case N-921 from Regulatory Guide 1.147, Revision 21, with Table 2 condition (2) that limits initial implementation of the American Society of Mechanical Engineers (ASME) Code Case N-921 to the beginning of an inservice inspection (ISI) interval.

The exemption request, if granted, will allow Dresden Nuclear Power Station (Dresden) Units 2 and 3 and Quad Cities Nuclear Power Station (Quad Cities) Units 1 and 2 to implement ASME Code Case N-921 during the current ISI interval

Exemptions are requested for the remainder of each plant's extended ISI interval.



Code Case N-921 establishes a 12-year ISI interval for inservice inspection programs. The marginal extension from a 10-year to 12-year ISI interval supports a minimum of two refueling outages per period and allows levelized distribution of examinations and tests across all inspection periods.

Condition (2) on Code Case N-921 was added to NRC Regulatory Guide 1.147, Revision 21 in response to an anonymous public comment (ML23235A158 and ML23291A328)



B-6 Code Case N-921 Implementation

Comment Summary B-6: A commenter suggested that the NRC add a condition to require implementation of Code Case N-921 at the beginning of an ISI interval. The commenter stated that implementing the code case mid-ISI interval could lead to extra burden for the NRC and the industry. Specifically, existing alternatives would likely need to be reauthorized by the NRC. The commenter suggested that the NRC should add a condition requiring that Code Case N-921 only be implemented at the start of a new interval, to eliminate these requests. The commenter stated that NRC's regulatory analysis did not provide or address the additional costs associated with updating to the code cases mid-interval for licensees submitting new alternative requests. (13-2, 13-3)



NRC Response:

The NRC agrees with the commenter and has added a condition to only allow implementation of Code Case N-921 to occur at the beginning of an ISI interval, rather than allowing implementation during a mid-ISI interval. The NRC agrees that mid-ISI interval implementation of Code Case N-921 would create a significant burden for both the NRC and licensees because of the ongoing schedule for ISI activities and the need to resubmit requests for alternatives authorized based on a 10-year ISI interval. The NRC notes that the ASME BPV Code currently allows a 1-year extension of the 10-year ISI interval with certain conditions, which makes the necessary burden to achieve an extra 1-year ISI interval extension to be of questionable resource value. Licensees wishing to implement Code Case N-921 during a mid-ISI interval should submit an exemption request in accordance with 10 CFR 50.12, "Specific exemptions," and should review all *NRC-authorized alternative requests to determine whether they need to be resubmitted to the NRC for* review and authorization.

As a result of this comment, the NRC added a condition to RG 1.147, Revision 21, to only allow implementation of Code Case N-921 at the beginning of a new ISI interval.



The Statements of Consideration to the Final Rule reiterate the rational underlying N-921 Condition 2 (Final Rule, ASME Code Cases and Update Frequency, 89 Fed. Reg. 58039, July 17, 2024):

There are complications associated with extending the ISI interval mid-interval. For instance, licensees wanting to extend the ISI interval mid-interval would need to evaluate all NRC-approved alternatives to determine if they should be resubmitted, especially considering that NRC may have granted the alternative assuming a 10-year ISI interval.... Further, Code Case N–921 specifies requirements in terms of three 4-year periods, so licensees would need to reconcile their inspection schedules accordingly. Therefore, this final rule specifies that Code Case N–921 can only be implemented following a routine update of the ISI program (i.e., cannot be implemented mid-interval) and requires the licensee's ISI code of record to be the 2017 Edition, or later, of the BPV Code.____

In summary, the NRC identified two distinct concerns with allowing mid-cycle implementation of Code Case N-921:

- Licensees would need to reconcile their inspection schedules to conform with the three 4-year periods specified in Code Case N-921, and
- Licensees would need to evaluate all NRC-approved alternatives to determine if they should be resubmitted.

Additionally, 10 CFR 50.55a(y) was also introduced, adding a definition of Inservice Inspection Interval to state *"the inspection interval described in Article IWA-2432 of ASME BPV Code, Section XI, 1989 Edition with 1991 Addenda through the 2008 Addenda, or Article IWA-2431 of ASME BPV Code, Section XI, 2009 Addenda and later."* This definition creates an inconsistency with application of Code Case N-921.



Dresden and Quad Cities current ISI intervals started in January 2023 and April 2023, respectively, prior to the incorporation of Regulatory Guide 1.147, Revision 21 into the regulation. The addition of condition (2) after the public comment period prevented CEG from obtaining the planned benefit of Code Case N-921.

CEG proactively acted based on the information publicly available, in anticipated implementation of Code Case N-921 in the new interval. This includes revision of the period start and end dates to accommodate outage schedules and adjusting examination schedules accordingly while maintaining compliance with periodic distribution requirements. The requested exemptions would allow the plants listed in Table 1 to implement Code Case N-921



Table 1

Plant/Unit(s)	Interval ¹	ASME Section XI Code Edition	Current Interval Start Date	Current Interval End Date	Proposed 12-yr Interval End Date ²
Dresden Nuclear Power Station, Units 2 & 3	Sixth - ISI Fourth - CISI	2017 Edition	January 20, 2023	January 19, 2033	January 19, 2035
Quad Cities Nuclear Power Station, Units 1 and 2	Sixth - ISI Fourth - CISI	2017 Edition	April 2, 2023	April 1, 2033	April 1, 2035

Notes:

1. ISI – Inservice Inspection; CISI – Containment Inservice Inspection

2. The Interval End Date is subject to change in accordance with -2430(c)(1) of Code Case N-921.



Authorized by law

This exemption would allow CEG to implement ASME Code Case N-921 at Dresden and Quad Cities during current ISI intervals. The NRC acknowledged the appropriateness of submitting an exemption in its response to public comments noted previously. Granting the proposed exemption will not result in a violation of the Atomic Energy Act of 1954, as amended, and will not present an undue risk to the public health and safety and is consistent with the common defense and security. Therefore, the exemption is authorized by law.



Will not present an undue risk to public health and safety

The underlying purpose of condition (2) on Code Case N-921 was to prevent extra burden to the NRC and the Licensee regarding ISI program implementation, examination schedule revisions and re-submittal of previously approved Relief Requests. Any potential burden associated with implementing Code Case N-921 impacts time and resources for managing the ISI program and does not impact public health and safety. Therefore, the exemption will not present an undue risk to public health and safety.



Consistent with the common defense and security

The proposed exemption would allow CEG to implement ASME Code Case N-921 at Dresden and Quad Cities during the current ISI intervals and has no relation to security. The proposed exemptions will not adversely affect CEG's ability to physically secure the sites and facilities and to protect special nuclear material. Therefore, the common defense and security is not affected by this exemption.



Special circumstances are present

Criterion ii - Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule.

Criterion iii - Compliance would result in undue hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted

Criterion vi - There is present any other material circumstance not considered when the regulation was adopted for which it would be in the public interest to grant an exemption



Generally speaking, the purpose of the 2024 rulemaking adopting the current provisions of 10 CFR 50.55a(a)(3)(ii) is for the NRC to identify new, revised, and reaffirmed ASME code cases that the NRC has determined are acceptable for use as voluntary alternatives to compliance with certain provisions of the ASME BPV Code currently incorporated by reference into the NRC's regulations. The Statements of Consideration to the Final Rule adopting 10 CFR 50.55a(a)(3)(ii) state that "[t]he inservice inspection interval and the code of record update interval should be synchronized to promote order and predictability in licensee inservice inspection programs."

Because the concerns identified by the NRC in establishing Condition 2 for Code Case N-921 are not applicable or can be easily mitigated by CEG, the underlying purpose of the rule would continue to be achieved when allowing implementation of Code Case N-921 during the current ISI interval and the special circumstance of 10 CFR 50.12(a)(2)(ii) is present.



Implementation of Code Case N-921 following the start of the current ISI interval does not inhibit the ability of CEG to comply with code required periodic distribution requirements and allows for a more efficient distribution of examinations and tests throughout the remainder of the extended interval. Currently ASME Section XI divides the 10-year ISI interval into (3) periods, with allowable adjustments described in IWA-2430. Code Case N-921 allows plants to establish consistent four-year periods over the course of a 12-year ISI interval. This will ensure that each inspection period during the 12-year interval will have at least two refueling outages. During the most recent ISI interval update for each of the plants listed in Table 1, CEG established the periods as a 4-4-2 year breakdown so the additional 2 years allowed by N-921 could be added to the third period. The specific period dates and proposed interval dates, with outages, are shown for each Unit in Tables 2 through 5 in the following slides



Table 2: Dresden Unit 2 – Sixth ISI Interval, Fourth CISI Interval Table 3: Dresden Unit 3 – Sixth ISI Interval, Fourth CISI Interval

Interval	Periods	Outages	
Start Date to End Date	Start Date to End Date	Outage Numbers	
6th ISI Interval 4th CISI Interval 1/20/2023 to 1/19/2033 (current) 1/19/2035 (proposed)*	1<u>st</u> <u>1</u> /20/2023 to 1/19/2027	D2R28 11/2023 D2R29 11/2025	
	2nd 1/20/2027 to 1/19/2031	D2R30 11/2027 D2R31 11/2029	
	3rd 1/20/2031 to	D2R32 11/2031	
	1/19/2033 (current) 1/19/2035 (proposed)*	D2R33** 11/2033	

Interval	Periods	Outages
Start Date to End Date	Start Date to End Date	Outage Numbers
	1 <u>st_</u> <u>1</u> /20/2023	D3R28 11/2024
6th ISI Interval 4th CISI Interval 1/20/2023 to 1/19/2033 (current) 1/19/2035 (proposed)*	to 1/19/2027	D3R29 11/2026
	2nd 1/20/2027	D3R30 11/2028
	to 1/19/2031	D3R31 11/2030
	3rd 1/20/2031 to	D3R32 11/2032
	1/19/2033 (current) 1/19/2035 (proposed)*	D3R33** 11/2034

Notes:

*Proposed ISI interval end date for implementation of a 12-yr interval via N-921.

**Proposed last outage for implementation of a 12-yr interval via N-921.



Table 4: Quad Cities Unit 1 – Sixth ISI Interval, Fourth CISI Interval Table 5: Quad Cities Unit 2 – Sixth ISI Interval, Fourth CISI Interval

Interval	Periods	Outages
Start Date to End Date	Start Date to End Date	Outage Numbers
6th ISI Interval 4th CISI Interval 4/2/2023 to 4/1/2033 (current) 4/1/2035 (proposed)*	1<u>st</u> <u>4</u> /2/2023 to 4/1/2027	Q1R28 3/2025 Q1R29 3/2027
	2nd 4/2/2027 to 4/1/2031	Q1R30 3/2029 Q1R31 3/2031
	3rd 4/2/2031 to	Q1R32 3/2033
	4/1/2033 (current) 4/1/2035 (proposed)*	Q1R33** 3/2035

Interval	Periods	Outages	
Start Date to End Date	Start Date to End Date	Outage Numbers	
	1 <u>st_</u> <u>4</u> /2/2023 to	Q2R27 3/2024 Q2R28	
6 th ISI Interval 4 th CISI Interval	4/1/2027 2nd 4/2/2027	3/2026 Q2R29 3/2028	
4/2/2023 to 4/1/2033	to 4/1/2031	Q2R30 3/2030	
(current) 4/1/2035 (proposed)*	3rd 4/2/2031 to	Q2R31 3/2032	
	4/1/2033 (current) 4/1/2035 (proposed)*	Q2R32** 3/2034	

Notes:

*Proposed ISI interval end date for implementation of a 12-yr interval via N-921.

**Proposed last outage for implementation of a 12-yr interval via N-921.



Regarding the concern that significant burden would result from licensees needing to reconcile their inspection schedules to conform with the three 4 year periods specified in Code Case N-921, this does not create any particular challenge. CEG regularly revises the ISI examination schedule mid-interval. Reasons for revising the ISI examination schedule midinterval include, but are not limited to, dose, availability of examination equipment and personnel, availability of personnel for required support tasks (e.g. insulation, scaffold, weld preparation), outage schedules, outage duration, changes in operating strategy, etc. Maintaining the ISI examination schedule, including mid-interval changes, is core business for ISI program owners and implementation of Code Case N-921 mid-interval does not result in a significant burden, contrary to the commenter's assertion. As previously mentioned, during the most recent ISI interval update, CEG took specific actions in anticipation of implementation of Code Case N-921 in the new interval. This includes revision of the period start and end dates and adjusting examination schedules accordingly.



With respect to the need to evaluate previously approved alternates that were based on a 10-year ISI interval, this would not be a significant burden and in fact Constellation has already performed this evaluation. CEG performed a review of all previously authorized alternatives (relief requests) for Dresden and Quad Cities and assessed the impact of extending the interval by 2 years to implement Code Case N-921. The results of this assessment determined that there is no impact to any of the previously approved alternatives. The full assessment of each previously approved alternative and impact of transitioning to a 12-year interval will be included with the exemption request. An Example is provided on next slide.



Criterion ii: Basis for Approval of Exemption Request

Dresden Unit 2 & 3 – 6th ISI Interval and 4th CISI Interval Assessment of Previously Approved Alternatives						
Relief Request Number	Description	Unit(s) Affected	Submittal Date (Reference)	Approval Date (Reference)	Duration of Approval	Impact of 12-yr Interval on Previous Approval
I6R-03	Extension of Relief for Alternative Reactor Pressure Vessel Circumferential Weld Examinations for Additional License Operating Period	2 & 3	2/23/2004 ML040620661	3/23/2005 ML050620359	Alternative is authorized for the 20 year period of extended operation which expires on 12/22/2029 for Unit 2 and 1/12/2031 for Unit 3.	No Impact - Alternative is authorized for the 20 year period of extended operation. Continued use of the alternative beyond the end of the period of extended operation requires resubmittal to the NRC regardless of the length of the ISI Interval.
I6R-06	Alternative Concerning ASME Section XI Repair/Replacement Documentation for Replacement of Pressure Retaining Bolting.	2 & 3	5/18/2021 ML21138A839	12/13/2021 ML21267A317	Alternative is authorized for current duration of the sixth ISI Interval.	No Impact – Alternative eliminates certain R&R documentation requirements for replacement of pressure retaining bolting. This is an administrative requirement and acceptability of the proposed alternative is not impacted by the duration of the ISI Interval.
I6R-10	Alternative to Permit Continued Application of Certain ASME Section XI 2013 Edition NDE Requirements for Short Term Fleet Consistency	2 & 3	7/19/2022 ML22200A258	1/6/2022 ML23004A171	Alternative is authorized to use ASME Section XI 2013 Edition for NDE requirements through the end of the first inspection period which is 1/19/2027.	No Impact – Alternative is authorized through the end of the first inspection period only. Extension of the ISI Interval end date does not impact this alternative.



The proposed exemptions will allow implementation of Code Case N-921 for the remainder of the current ISI interval for the plants listed in Table 1. All other conditions associated with Code Case N-921 apply as specified in Regulatory Guide 1.147, Revision 21. The proposed exemptions do not include an alternative to the ASME Section XI requirements to distribute examinations among the three inspection periods and there is no impact on previously approved relief requests.



Compliance with Section 50.55a(a)(3)(ii) and the related condition imposed on the implementation of Code Case N-921 would result in undue hardship and Special Circumstance 50.12(a)(2)(iii) is present.

The Commission has explained that the application of Criterion iii, undue hardship, is narrow. As the Commission stated in the 1985 rule adopting the current exemption criteria, this special circumstance was *"intended to provide equitable treatment to applicants or licensees who, because of some unusual circumstance, are affected in a manner different than that of other similarly situated licensees or applicants."* Here, however, Constellation will, in fact, be subjected to an undue hardship as a result of the application of Condition 2 to Code Case N-921. Specifically, limiting Constellation from being able to adopt N-921 for Dresden and Quad Cities would result in inequitable treatment because it would be done on a basis that does not apply to these facilities.



As explained previously, none of the concerns regarding midcycle adoption of N-921 that underlie Condition 2 are applicable to Constellation or can be easily mitigated. Therefore, it would be fundamentally unfair to preclude Constellation's ability to implement the useful improvements to the Dresden and Quad Cities inservice inspection programs otherwise permitted by N-921.



There are material circumstances that are present and not considered when the NRC modified 10 CFR 50.55a(a)(3)(ii) and adopted the related Condition 2 for implementation of Code Case N-921 and Special Circumstance 50.12(a)(2)(vi) is present.

Specifically, the NRC adopted Condition 2 based on a single comment without an opportunity for the industry to provide additional input on whether, in fact, mid-cycle implementation of Code Case N-921 would result in the significant burden asserted. Had such input been provided, the NRC would have understood a mid-cycle implementation of Code Case N-921 would not create the "significant burden" that it anticipated. As explained, the concerns underlying this condition do not exist for CEG.



CEG has determined that the requested exemptions meet the categorical exclusion provision in 10 CFR 51.22(c)(25), as the requested licensing action is an exemption from the requirements of the Commission's regulation and (i) there is no significant hazards consideration; (ii) there is no significant changes in the types or significant increase in the amounts of any effluents that may be released offsite; (iii) there is no significant increase in individual or cumulative public or occupational radiation exposure; (iv) there is no significant construction impact; (v) there is no significant increase in the potential for or consequences from radiological accidents; and (vi) the requirements from which an exemption is sought involve inspections, scheduling and administrative requirements.



Proposed Schedule

- January/February 2025 CEG prepare Exemption Request
- February 2025 CEG submit Exemption Request
- August 2025 CEG requested approval



Questions?

